Co-Learning Sustainability Science & Policy: An interdisciplinary approach to food waste reduction

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DIANA DAVIS SPENCER FOUNDATION

THE UNIVERSITY OF MAINE
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THE UNIVERSITY OF MAINE
Interdisciplinary Undergraduate Research Collaborative

Outline

- Introduction:
  - Project goals
  - Research team
  - Timeline
- Reflecting on the curriculum: What worked?
  - Creating an interdisciplinary toolbox
  - Building a supportive team
- Opportunities for other contexts

Project Goals

- Explore the issue of food waste from multiple disciplinary perspectives
- Move toward sustainable solutions to reduce food waste
- Develop an interdisciplinary undergraduate research training program

Research Team

- Interdisciplinary **undergraduate**, **graduate,** and **faculty** research team
  - Environmental engineering
  - Biomedical engineering
  - Ecology & environmental science
  - Nursing
  - Human dimensions of climate change
  - Anthropology
  - Food science
  - Economics
  - Social psychology

Timeline

Spring 2018 - Introduction to Food Waste & Interdisciplinary Research

- Introduction to sustainability science & interdisciplinary research
- Introduction to food waste as an environmental, economic, and social problem.
- Students present their collaborative approach at UMaine Student Symposium
- Students reflect & present on first semester to Mitchell Center team

Summer 2018 - Individual Research

Fall 2018 & Spring 2019 - Knowledge Sharing

- Co-authoring manuscript on interdisciplinary approach and food waste in Maine
- Presenting research in multiple venues (among peers, for interdisciplinary audiences, for practitioners)
- Training to lead next cohort of students

Building an Interdisciplinary Toolbox

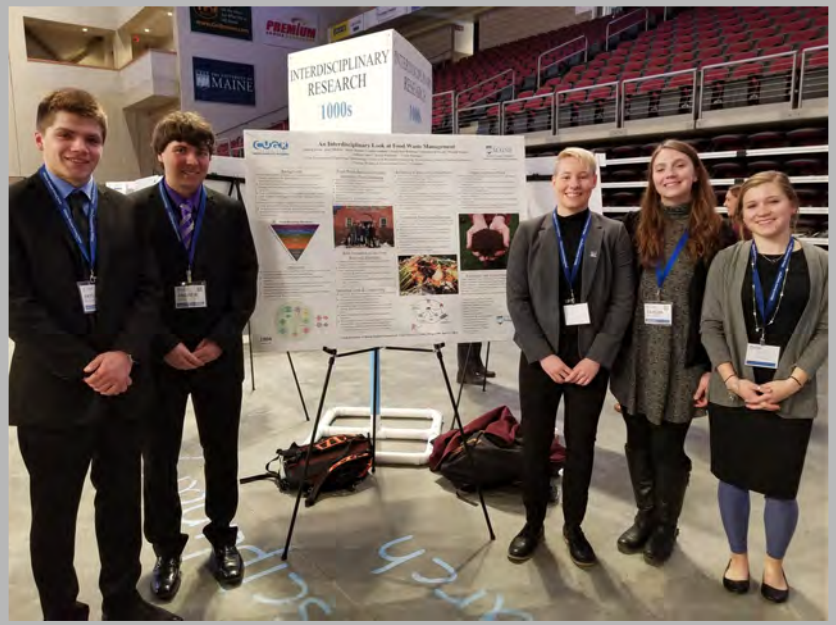
Getting Started

- Weekly meetings
  - Focused on discussion
- Assigned readings
  - Interdisciplinary and sustainability-focused articles
- Journal entries
  - Reflecting on achievements, developing questions

Project-Based Learning

Working in small groups to define a problem – *before* thinking about different approaches to solving it.

- Article studies
- Group discussion
- Analyzing data
- Breaking down barriers between disciplines



Solutions-Oriented Research

Recognizing different aspects of the problem and drawing on diverse perspectives to develop a solution.

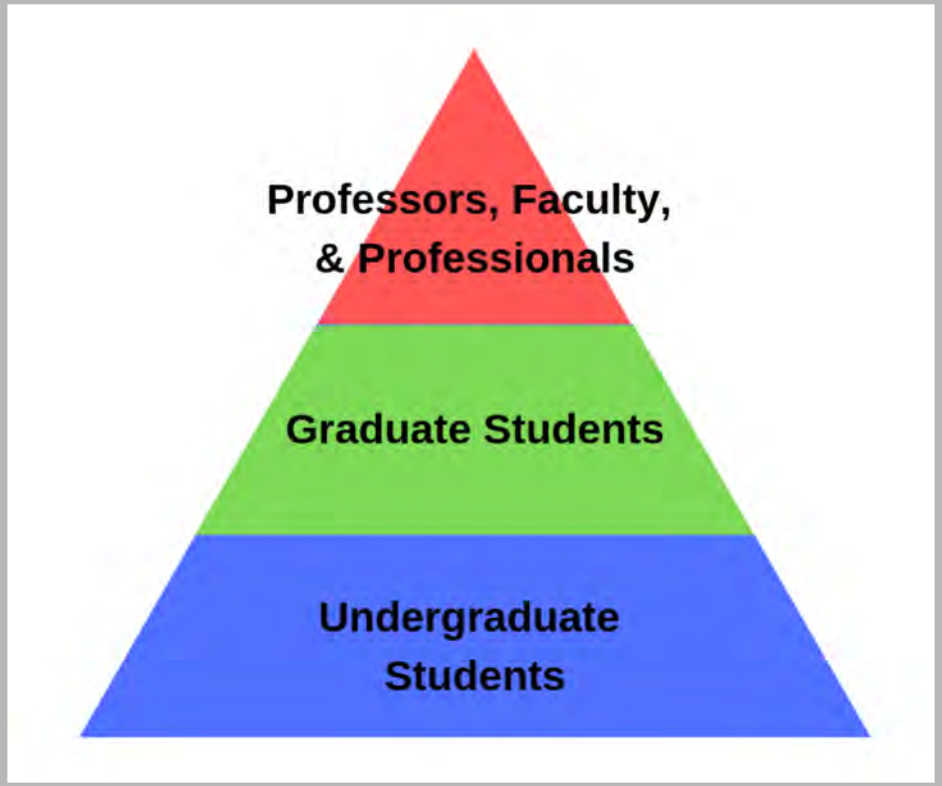
- Viewing a problem holistically
- Practicing and valuing diverse ways of conducting research

“Since the beginning of the semester I have learned so much about how important interdisciplinary research is to solve real-world problems and the importance of multiple perspectives.”
- Skyler

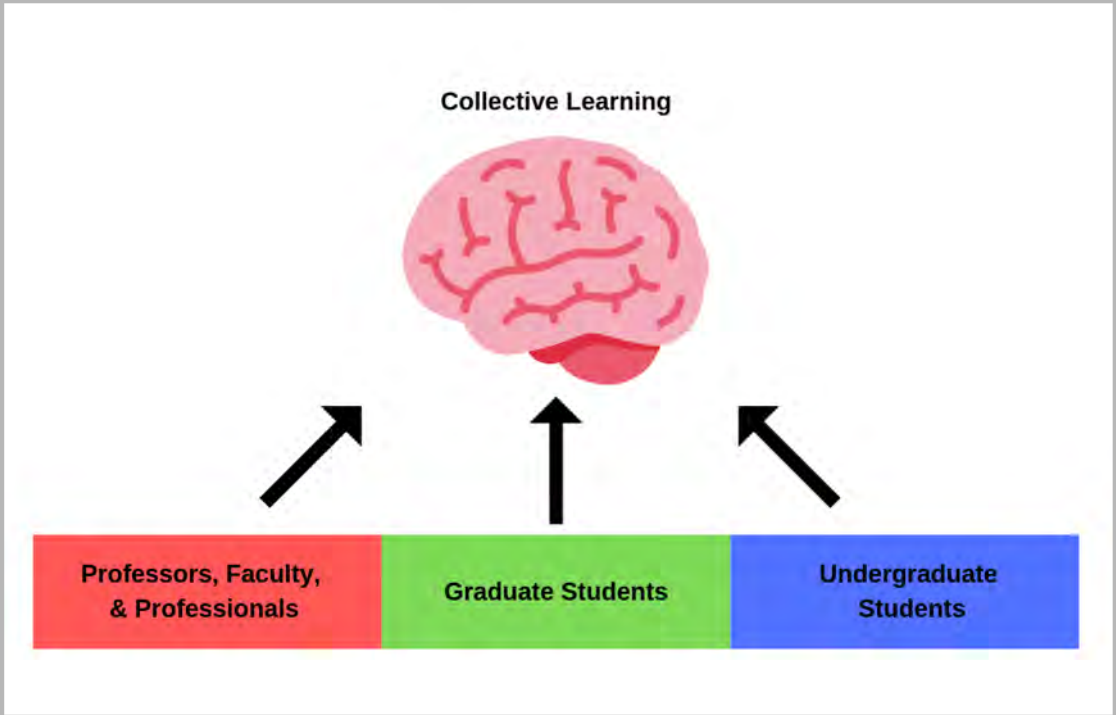
Group Dynamics

(*used with a plural verb*) the interactions that influence the attitudes and behavior of people when they are grouped with others through either choice or accidental circumstances.

Team Setup: Common Hierarchy



Team Setup: Flattened Hierarchy



Collective Learning

Involves people working in pairs or small groups to discuss concepts or find solutions to problems.

Learning occurs across all levels

An increase in student-faculty interaction allows development of confidence in research, oral-communication, responsibility, professional and social skills

Team Setup: Undergraduate Students

Undergraduate Level

Specialization in field has not yet occured

- Disciplinary boundaries have not been set in stone
- Technical jargon is not developed to the point that translation becomes difficult

Because of this, undergraduate education is a great time for interdisciplinary interventions.

- Allows for development of a diverse perspective and understanding of bigger implications of individual research

Professional Communication/Understanding

Visiting Research Sites

Professional Travel

Shared Work Space

Building Personal Relationships

I think it is important everyone feels comfortable talking so that everyone's opinions and ideas are heard in the team.
- Skyler

I'm really pleased with how well we work with each other. Everyone is respectful of each other's opinions and I never feel that my ideas aren't being considered.
- Taylor

Opportunities for Other Contexts

- Project-based learning
- Small groups with faculty, graduate & undergraduate collaboration
- Leadership opportunities

Acknowledgements

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Lighting a path to sustainable waste management practices

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